

What is claimed is:

1. A computer implemented method of overclocking a graphics system, comprising:
 - receiving a user request for overclocking;
 - forming sets of overclocking parameters to be evaluated, each set of overclocking parameters having at least one overclocking parameter that is unique and which is associated with at least one of a graphics processor and a graphics memory;
 - for each set of overclocking parameters, applying a stress test, said stress test including executing a graphics test sequence and monitoring graphical performance of said graphics system; and
 - determining a safe set of overclocking parameters passing said stress test.
2. The method of claim 1, wherein said forming sets of overclocking parameters comprises:
 - adjusting a clock rate of a clock of said graphics system.
3. The method of claim 1, wherein said forming sets of overclocking parameters comprises:
 - adjusting a graphics processor core clock rate.
4. The method of claim 1, wherein said forming sets of overclocking parameters comprises:
 - adjusting a graphics memory clock rate.
5. The method of claim 1, wherein said forming sets of overclocking parameters comprises:
 - adjusting at least one clock rate to form at least one new clock rate; and
 - setting at least one of a chip voltage, memory timing, or a fan speed for each said at least one new clock rate.
6. The method of claim 1, wherein said forming sets of overclocking parameters and said applying said stress test comprises:

incrementing a clock rate of said graphics system to form new sets of overclocking parameters; and

applying said stress test for each incremental increase in said clock rate;

said clock rate incremented until a number of errors associated with said stress test exceeds a preselected number of errors.

7. The method of claim 1, wherein said applying said stress test comprises: counting pixel errors of a graphics pipeline and incrementing said clock rate comprises incrementing said clock rate until a number of pixel errors exceeds a pre-selected number of pixel errors.

8. The method of claim 7, wherein said applying said stress test comprises:
writing to a three dimensional surface;
performing an exclusive or operation; and
determining uniformity.

9. The method of claim 1, wherein said applying said stress test comprises:
executing a test program sequence of graphical operations; and
determining a number of pixel errors generated by a graphics pipeline of said graphics system;
wherein said set of overclocking parameters passes said stress test if said number of pixel errors is no greater than a preselected number of pixel errors.

10. The method of claim 1, wherein said determining a safe set of overclocking parameters passing said stress test comprises: selecting a maximum safe clock rate of a graphics processing unit.

11. The method of claim 1, wherein said determining a safe set of overclocking parameters passing said stress test comprises: selecting a maximum safe clock rate of a graphics memory.

12. A computer implemented method of overclocking a graphics system, comprising:
receiving a user request for overclocking of at least one of a graphics processor and a graphics memory;

adjusting a clock rate of at least one clock of said graphics system;
for each new clock rate, applying a stress test, said stress test including executing a graphics test sequence and monitoring errors generated in response to execution of said graphics test sequence;
determining a maximum clock rate for each of said at least one clock for which said graphics system has a number of errors below a threshold level; and
setting said at least one clock rate at said maximum clock rate(s).

13. The method of claim 12, wherein said receiving a user request comprises: receiving an input from a control panel of a graphical user interface.

14. The method of claim 13, further comprising: displaying said graphical user with updated overclocking parameters.

15. The method of claim 12, wherein adjusting said clock rate of at least one clock comprises: incrementing a core clock rate of a graphics processing unit.

16. The method of claim 12, wherein adjusting said clock rate of at least one clock comprises: incrementing a memory clock rate of a graphics memory.

17. The method of claim 12, wherein adjusting said clock rate of at least one clock comprises:
incrementing a first clock rate by a first preselected increase in clock rate; and
incrementing a second clock rate by a second preselected increase in clock rate.

18. The method of claim 12, wherein said applying said stress test comprises: counting pixel bit errors of a graphics pipeline.

19. The method of claim 12, wherein said applying said stress test comprises:
writing to a three dimensional surface;
performing an exclusive or operation; and
determining uniformity.

20. The method of claim 12, further comprising:

sensing on-chip temperature; and
in response to detecting a threshold temperature during stress testing, selecting a clock rate
to maintain a chip temperature at or below said threshold temperature.

21. The method of claim 12, further comprising:
for each new core processor clock rate, selecting a chip operating voltage.
22. A graphics system, comprising:
a graphics processing unit (GPU), comprising:
a graphics pipeline; and
an overclocking control module for selecting and evaluating overclocking parameters;
said graphics system configured to automatically test overclocking parameters and determine maximum safe overclocking parameters in response to a user request.
23. The graphics system of claim 22, wherein said overclocking control module performs a stress test to evaluate errors generated by said graphics pipeline for each test set of overclocking parameters.
24. The graphics system of claim 22, wherein said graphics system includes computer executable instructions for running a control panel program having an overclocking control module for selecting and evaluating overclocking parameters and wherein said user inputs said request to said control panel.
25. The graphics system of claim 22, wherein said graphics system determines a maximum safe GPU clock rate.
26. The graphics system of claim 22, wherein said graphics system determines a maximum safe memory clock rate of a graphics memory associated with said GPU.
27. The graphics system of claim 22, wherein said graphics system determines a maximum safe GPU clock rate and a maximum safe memory clock rate of a graphics memory associated with said GPU.

28. A software driver module for a graphics system, comprising:
- at least one function call instantiated in response to a control panel input to perform a stress test on each of a plurality of sets of overclocking parameters, each set of overclocking parameters including at least one element from the group consisting of a graphics processor core clock rate and a graphics memory clock rate;
- said software driver module selecting overclocking parameters passing said stress test.
29. A graphical user interface for a graphics system, comprising:
- a control panel for displaying overclocking parameters that include at least one of graphics processor core clock rate and a graphics memory clock rate, said control panel permitting a user to select an automatic overclocking mode;
- said control panel instantiating a function call to said graphics system to test different overclocking parameters, set overclocking parameters, and return overclocking parameters to said control panel in response to a user selection of said automatic overclocking mode.
30. A graphics apparatus, comprising:
- means for selecting sets of overclocking parameters to test;
- means for performing a graphical stress test for said sets of overclocking parameters; and
- means for determining safe overclocking parameters passing said graphical stress test;
- wherein said overclocking parameters comprise at least one of a graphics processor core clock rate and a graphics memory clock rate.
31. A graphics system, comprising:
- means for a user to initiate a request to select overclocking parameters of at least one of a graphics processor and a graphics memory;
- means for selecting sets of overclocking parameters to test;
- means for performing a graphical stress test for said sets of overclocking parameters; and
- means for determining safe overclocking parameters passing said graphical stress test;

wherein said overclocking parameters comprise at least one of a graphics processor core clock rate and a graphics memory clock rate.

32. The graphics system of claim 31, further comprising: control panel means for displaying maximum safe overclocking parameters.